



**SAFE WATER AND AIDS PROJECT (SWAP)
Annual Report – 2021**



Photo Courtesy of Karim Kara

Safe Water and AIDS Project (SWAP)
Behind Royal City Garden Hotel, Off Aga Khan Road, Milimani Estate
P.O. Box 3323, 40100 Kisumu, Kenya, Tel +254(0)202030712
Email: info@swapkenya.org
Website: <http://www.swapkenya.org>

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List of Acronyms

ABHR	Alcohol Based Hand Rub
ANC	Ante Natal Care
BMGF	Bill and Melinda Gates Foundation
CBO	Community Based Organization
CDC	Centres for Diseases Control and Prevention
CGMR	Centre for Geographical Medicine Research
CHMT	County Health Management Team
CHPs	Community Health Promoters
CHVs	Community Health Volunteers
CKD	Chronic Kidney Disease
CoP	Community of Practice
COVID-19	Corona Virus Disease 2019
CPT	Community Tracking Perception
DPDM	Division of Parasitic Diseases and Malaria
ECD	Early Childhood Development
FGD	Focus Group Discussion
FBO	Faith Based Organization
HCF	Harber Charitable Foundation
HENNET	Health NGO's Network

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IPC	Infection Prevention and Control
IUSSP	International Union of Scientific Study on Population
KAP	Knowledge Attitudes and Practices
KEMRI	Kenya Medical Research Institute
KES	Kenya Shilling
KEWASNET	Kenya Water and Sanitation Civil Society Network
KIWASH	Kenya Integrated Water, Sanitation and Hygiene
LREB	Lake Region Economic Block
MOH	Ministry of Health
MORBID	Morbidity Operation Research for Bilharzia Implementation Decision
MOU	Memorandum of understanding
NIH	National Institute of Health
NTD	Neglected Tropical Diseases
NGO	Non-Governmental Organization
MUERC	Maseno University Ethics Review Committee
NACOSTI	National Commission for Science Technology and Innovation
OXFAM	Oxford Committee for Famine Relief
PLWD	People Living With Disability
POC CCA	Point of Care Circulating Cathodic Antigen
PPE	Personal Protective Equipment
RAND	Research and Development
RCCE	Risk Communication and Community Engagement
SBCC	Social Behaviour Change Communication
SOP	Standard Operating Procedures
SWAP	Safe Water and Aids Project
TFGH	Task Force on Global Health
USAID	United States Agency for International Development
USD	Unites States Dollar
WASH	Water Sanitation and Hygiene
WSU	Washington State University

FROM THE COUNTRY DIRECTOR'S DESK



In this second year of COVID-19, SWAP continued to provide essential services and innovative solutions for improving health. The Human Resources tremendously grew from 42 at the beginning of the year to 92 staffs and at the end we had a total of 74 staffs. All SWAP employees complied to COVID-19 vaccination requirement to ensure safety and health of the staffs.

The procurement committee was reconstituted to guarantee fairness, efficiency and value for money in addition to ensure procurement of goods, works and services are made timely. Annual External Audit for 2020 was conducted by Ronalds LLP and no issues arose. This culminated in the submission of timely NGO annual returns to National NGO Coordinating Body.

SWAP supported the Adopt a School Initiative in Ombaka Primary, Secondary and School for the Mentally Handicapped to comply with COVID-19 protocols. The World Mathematics Fund supported a Mathematics Resource Centre in Ombaka Primary and Secondary Schools.

SWAP responded to perennial flood in collaboration with the Western Kenya Humanitarian Hub members, which saw 280 households being evacuated from their homes in Ombaka. Nine (9) COVID-19 vaccination outreaches were organized for vulnerable segments in the society including displaced families in evacuation centers, street families and people living with disability. An almost blind man for whom SWAP had built a house in Ombaka, was taken for an eye operation on cataract at Sabatia Eye Hospital, who then was discharged and able to see now.

SWAP continued to play a significant role of Fund Management for KEMRI CGMR, IUSSP and BMGF.

In the global arena, SWAP joined two Community of Practice (CoP) including partners implementing decentralized chlorine generation and Water, Sanitation and Hygiene in healthcare facilities. In addition, we became members of the Hand Washing Advisory Board. New partnership with like-minded organization such as Washington State University, CDC, OXFAM, STEMA, Elascor, KIWASH, Abt Associates, ECD Network were established. SWAP was introduced to online DONORSEE crowd funding opportunity and approved. Ten (10) projects were fully funded and 14 open projects waiting for funding. Six (6) contracts came to an end during the period under review.

SWAP was actively involved in the development of National WASH in Schools Strategy and participated in biweekly meetings for WASH IPC cluster. Two new research articles were published in international peer reviewed journal titled "Impact of Supply- and Demand-Side Interventions Integrated with Antenatal Care on Use of Maternal Health Services in Western Kenya", and on "Effectiveness of conditional cash transfers (Afya Credit) incentives to retain women in the continuum of care during birth and post-natal period in Kenya: a cluster randomized trial". In the year under review, SWAP produced 3,715.5 litres of Alcohol Based Hand Rub which was distributed in 47 public healthcare facilities and 34 hot spot area for Infection Prevention and Control. STREAM Disinfectant Generators were installed in 8 health care facilities and produced 10,376 Litres of 0.5% chlorine solution. SWAP became finalist for the Suqia prize award by Mohammed bin Rashid AL Maktoum Global Water Award.

I thank all the development Partners, donors, well-wishers, customers, at the County, regional, National and International levels and the structures/ community at large that we serve. Special thanks goes to you all staffs and Board of Directors for the hard work, dedication, commitment to your various roles and responsibilities.

I wish all readers of this report a Happy and prosperous New Year 2022. When we come together we achieve great things. Together for SWAP.

Alex Mwaki,
Country Director

FROM THE TECHNICAL ADVISOR'S DESK



We completed our 16th year successful with yet again multiple activities and partnerships. We entered into new partnerships with Washington State University, OXFAM, STEMA and ELASCON. We continued engaging County Governments.

COVID-19 is still with us and new variants causing more strain on the health sector, but for SWAP new opportunities. We have supported the Counties with COVID-19 vaccination outreaches, production and distribution of Alcohol Based Hand Rub to healthcare facilities and hot spot areas and advisory services. We scaled up the installation of STREAM disinfectant generators to 8

health facilities which produces chlorine from water and salt for infection prevention and control. We experienced increased demand for our health products, which were sold door to door by Community Health Volunteers and to small business enterprises as well as partner organizations.

The weather has been erratic and we continued supporting families affected by flood and back flow of the Lake Victoria in Nyando Sub County with food and non-food supplies. They were evacuated from their homes and stayed in temporary shelters. We ensured they had handwashing stations strategically placed for them to practice hand hygiene. We continued with the Adopt a School Initiative mostly supporting girls with sanitary pads on monthly basis.

SWAP successfully finalized the 5 Year CDC Cooperative agreement for research on neglected tropical diseases and received a new interim grant for one year, while new proposals are pending for ongoing research on bilharzia. This is in collaboration with the National School Based Deworming Program.

We also completed the Early Childhood Development research and implementation in collaboration with RAND Corporation testing an international curriculum on parenting and child simulation. We joined as a member of the ECD Network and were able to present our findings during the 4th National ECD Conference.

Our two Solar Powered Water Disinfection Units served communities with the much needed safe water. We received the exciting news that we became winners of the 3rd cycle of the Mohammed bin Rashid Al Maktoum Global Water Award as a result of the above environment friendly water enterprises. The Award ceremony will take place in Dubai in February 2022.

Our water lab is offering regular quality testing of all our products and technologies and became an essential resource for external partners as well.

SWAP was registered in the Netherlands as a foundation. This was a requirement by Donor See, the crowd funding platform which we have been using to support small community projects. Currently we are in the process to open a business account.

I continued to serve on the LREB COVID-19 Advisory Committee of Eminent persons with weekly meetings and as committee, we provide regular advisories to the Governors of all 14 Counties. With donor support we were able to launch the COVID Dx, a data base for COVID for the LREB region.

We sincerely thank the support of the board and the commitment and team work of the entire SWAP family to continue realizing SWAP's vision and dreams. Looking forward for more meaningful engagement in the years to come.

Alie Eleveld
Technical Advisor

SWAP's VISION, MISSION AND CORE VALUES

Vision: A healthy and empowered community where everyone enjoys high quality life.

Mission: To provide innovative solutions for improved health and economic status of communities.

Core values:

- **Dynamic:** We progressively look back, and use those experiences to determine our future direction.
- **Resilient:** We are resilient, and adapt to positive and negative changes and needs in society.
- **Integrity:** We ensure integrity in staff, by having controls, systems, processes in place and practice zero tolerance to corruption.
- **Efficiency:** We strive for better results & high productivity in products and services, and excellent execution of our duties.
- **Professionalism:** We believe in maximizing the skills and expertise of our human resource in the delivery of health interventions and research, providing quality, efficient and effective services.
- **Result Oriented:** We strive to provide result-oriented health services, minimizing costs and maximizing outputs.
- **Innovative:** We are innovative, and change is our constant. We embrace the unknown and are willing to go the extra mile to achieve our goals.
- **Diversity:** We embrace diversity among staff, partners, and stakeholders. We always ensure there is a positive spirit which underpins the way we interact with others.

COMMUNICATION

Facebook: www.facebook.com/Safe-Water-and-AIDS-Project-338690551549/?ref=hl

Twitter: @swapkenya

Website: <https://www.swapkenya.org/>

ACKNOWLEDGEMENTS

SWAP takes this opportunity to recognize the Board of Directors, Management Staffs and other employees for their commitment and dedication to the various tasks and responsibilities performed by each one of them. The tremendous growth and achievements realized in 2021 was made possible with support from the below listed developments partners, institutions, individuals and Foundations.

To All we say a big **THANK YOU**.

- Aqua Clara International
- Lwala Community Health Services
- Center for Diseases Control and Prevention in Kenya and US
- University of Illinois at Chicago
- Stockholm Environment Institute
- Harber Charitable Foundation
- VOx Impuls
- The Task Force of Global Health
- IUSSP – Fund Management
- Bill and Melinda Gates Foundation– Fund Management
- Gabriele Norado
- RAND Corporation
- KEMRI-CGMR, C
- Washington State University
- Oxfam
- STEMA
- Farm Africa
- Yellow House
- Donor See
- Global Giving Foundation
- PharmAccess
- International Mathematics Fund
- Jaramogi Oginga Odinga University of Science and Technology
- Griot Consulting Kenya Limited
- Siemens Stiftung
- CARE Kenya
- Elascon

2021 IN A NUTSHELL

1. Program Activities

I. Distribution Model of Health and Hygiene Products

The objective is to increase access to life saving health products to vulnerable and hard to reach communities. Social marketing of health products continued door to door by Community Health Promoters in Vihiga County. They use social behavioral change communication and village savings and loans. The community Health Promoters became self-reliant and useful members of society by improving health while generating income. Health products were also sold from the community kiosk at the SWAP Model village in Ahero and at local market centers. Partner organizations procured our products following the increased demand due to the ongoing flood and the COVID-19 pandemic. SWAP participates in exhibitions to show case its products. The products include; water treatment, ceramic water filters, hand washing stations, soaps and detergent, sanitary pads, menstrual cups, diapers, clean cook stoves, mosquito nets, solar lamps, Sato Toilets, Alcohol Based Hand Rub among others.

Total cumulative sales for the year was KES 21,005,375.35, with Kegondi satellite office in Vihiga County having total sales of KES 3,914,059, Kisumu office having a total sales of KES 17,002,173.35 and Ahero model village having total sales of KES 89,143,00.



Figure 1: Exhibition of SWAP products during WASH market place

II. Orphans, Vulnerable Families and Emergency Response

The objectives are to support the orphans and vulnerable children together with families from poor background through school fees, medical needs, shelter, psychosocial support and business startup costs to enable beneficiaries move towards self-reliance. SWAP's mandate is to provide oversight to the beneficiaries through regular follow-ups on their general wellbeing, payment of school fees, accommodation and rent, medical expenses and facilitation of their monthly upkeep for food and other basic needs. Beneficiaries under the scholarship program for the year 2021 include Sheila, Veronica, Armstrong, Faith, Nivah, Jemima. Nivah and Jemima graduated and are now self-reliant. Nivah got employment in the hotel industry and Jemima as a teacher. Roy with sickle cell anemia received ongoing medical support and has traveled to India for bone marrow transplant.



Figure 2: Graduation of Nivah at Ujima Foundation

Cost sharing is done with community members in mitigating the social economic impacts of emergencies like floods to develop resilience and better coping mechanisms in affected areas. In 2021, we yet again experienced flood and back flow of the lake, which resulted in families being evacuated from their homes while houses and crops were destroyed.

SWAP mainly intervened in Ombaka in Nyando Sub County with food and non-food items for displaced families. We built three houses for families whose homes were destroyed and restored the eye sight of a blind man from the same area through supporting a cataract operation. We received in kind and cash donations from other well-wishers to support those in need.



Figure 3: Restored eye sight of previous blind man



Figure 4: Distribution of food and non-food supplies

III. Community Scale Solar Water Treatment “Sola Maji”

The objectives for this project are to deploy solar-powered, decentralized, water treatment stations that treat surface water and to evaluate methods for making the operations sustainable. Operations at the solar powered water treatment using ozonation in Ahero and Chuthber continued. The system can produce between 2,000 and 4,000 litres of safe drinking water per day. Ongoing capacity building was done for the two community based organizations involving them in the management and supervision of the water operators. Water is sold to water vendors and individuals. SWAP’s lab did several quality checks ensuring the water is fit for human consumption. Site activities were done including health product sales, tree nursery, car wash and offering meeting space to boost the income.



Figure 5: Water vendors collecting water in Ahero Sola Maji Kiosk

IV. Risk Communication and Community Engagement

SWAP entered into an agreement with OXFAM Kenya in collaboration with Kisumu County Department of Health and Sanitation and WINAM Grassroots for COVID-19 response in Nyalenda, Obunga and Manyatta informal settlements. The objective of the project is to reduce transmission risk and secondary attack of COVID-19 in the target population by reducing misconceptions and negative perceptions about COVID-19 prevention and containment measures. Following community entry, SWAP supported 7 COVID-19 vaccination outreaches and participated in trainings of community health volunteers on community perception tracking of COVID-19. The CHVs were engaged to conduct targeted campaigns and community dialogue with organized community structures. 20 hand washing stations were provided at strategic points in public places and 20 schools were supported with soap and payment of their monthly water bills.

V. Adopt A School Initiative

Three schools were adopted in 2020 which is an initiative of the Lake Region Economic Bloc COVID-19 Advisory committee. The selected schools were Ombaka Primary, Secondary and Special school, where students come from families affected by flood. Most support was provided to put WASH infrastructure in place to help the schools to comply with COVID-19 rules and regulations. We continued visiting the schools with monthly supplies of sanitary pads for all eligible girls and organized a deworming exercise. We received funding from the World Mathematics fund to launch a mathematics resource center. The special school was painted and donations were given of mattresses and mosquito nets.



Figure 6: Girls in Ombaka schools receiving sanitary towels

VI. DonorSee

SWAP was approached by Donor See, a crowd funding platform to support some of the community projects. Following vetting and registration we raised USD 4,762 and had 10 projects fully funded, 4 partially funded and 10 open projects waiting for funding. Most projects are in support of very vulnerable families such as widow and orphan support, wheelchairs for disabled, medical support among others. <https://donorsee.com/swap>.



Figure 7: Donor See beneficiary receives support

VII. Global Giving

In 2020, SWAP applied to the Global Giving COVID-19 response fund to help protect health workers in Western Kenya. So far USD 4,790 was raised through this crowd funding platform and SWAP supported with hand washing stations, soaps, PPEs and water tanks. In December 2021, SWAP received an additional donation of USD 10,000 to support Kisumu County with COVID-19 vaccination outreaches.

<https://www.globalgiving.org/projects/covid-19-rapid-response-swap/>



Figure 8: Hand washing stations and soap handed over to a health facility

VIII. COVID-19 Response

SWAP's Founder and Technical Advisor was appointed in August 2020 as member of the Lake Region Economic Bloc COVID-19 Advisory Committee of Eminent persons which provides advisory services to the Governors and MOH of 14 Counties in the region. A COVID-19 data base was established with external funding. Several COVID-19 stakeholder's forums were attended. SWAP facilitated a COVID-19 vaccination outreach for families affected by flood in Ombaka and one in Kisumu Central for street families and people living with disability.



Figure 9: COVID-19 vaccination outreach targeting people living with disability and street families

2. Research Activities

I. Testing Means to Scale Early Childhood Development (ECD) Study

The aim of testing means is to sustain short-term Early Childhood Development impacts and to provide policy makers with rigorous evidence of how best to expand ECD interventions in low resource rural settings. SWAP finalized the testing of an international ECD curriculum on early childhood development focused on child stimulation and nutrition facilitated by trained Community Health Volunteers in Vihiga and Homa Bay Counties. In 2021, SWAP continued with 9 booster sessions. After the booster sessions, a final survey was conducted from August to November 2021. 939 households were reached. SWAP became a member of the National ECD Network and presented some of the findings during the 4th National ECD conference held in Siaya. The study was funded by NIH in collaboration with RAND Corporation.

II. Point of Care Circulating Cathodic Antigen Study

SWAP completed the 5 years CDC funded evaluation of point of care circulating antigen assay for mapping and monitoring mass drug administration for Schistosoma Mansoni Control program in Western Kenya. The study was supported by Centers for Diseases Control and Prevention, Division of Parasitic Diseases and Malaria (CDC-DPDM) in partnership with Safe Water and AIDS Project (SWAP). Children between 9 and 12 years were targeted in 45 primary schools in Siaya County. Urine and stool samples were collected, tested and mass drug administration was done in collaboration with the National Deworming Program. WASH surveys were done for the teachers and pupils of the 45 schools. Support was given to the schools to mitigate COVID-19.



Figure 10: Urine and Stool Sample collection in school

III. Morbidity Operational Research for Bilharzia Implementation Decisions (MORBID)

A one year USAID funded study through the Task Force for Global Health was completed to define what constitutes control of bilharzia related morbidity for *Schistosoma Mansoni* in Siaya and Vihiga Counties. The study further aimed to identify infection levels of *Schistosoma Mansoni* below where there is little or no detectable schistosomiasis associated morbidity. The study defined a tool to guide implementation decisions for Country programs on neglected tropical diseases. Samples were collected in 45 villages and ultrasound data collected and analyzed. All participants who tested positive were treated with praziquantel. In 2022 samples will be shipped to US for further analysis.

IV. Markers for Monitoring and Evaluation of Schistosomiasis Control Program

This research is an interim one-year study in preparation of another 5 year CDC funded cooperative agreement. The study will take place in Homa Bay and Siaya Counties. It is a follow up of the observations made on the above MORBID study. The objective is to generate sets of biological samples from persons with *Schistosoma mansoni* or *Schistosoma haematobium* infections that can be used for laboratory development and evaluation of new diagnostic tools for assessment of morbidity, monitoring and evaluation of ongoing control programs, and elimination and surveillance in western Kenya. Community entry was done and the study protocol submitted for review. Standard operation procedures are developed and study sites identified.

V. Production, Distribution and Monitoring of Alcohol Based Hand Rub (ABHR)

SWAP received funding and support from CDC for production of Alcohol Based Hand Rub using the WHO formulae. The objective was to produce, distribute and monitor consumption at public health care facilities. Technical support was provided for the production which was done at the Water Lab with appropriate safety measures, capacity building and quality control measures. SWAP received approval from the Kenya Bureau of Standards in November 2020 and started monthly distribution in January 2021 to 47 health care facilities and later 34 hot spot areas in Nyando and Nyakach Sub Counties.

We evaluated ABHR usage and developed a monitoring system and electronic database for ABHR consumption/use by service point with built-in feedback to production unit to produce and redistribute ABHR when stocks are low, development of localized estimates for monthly/yearly stocks needed by size of facility to aid future projections for consumption. The distribution was free but for sustainability purposes, SWAP included ABHR in the basket of products and sold to partner organizations and individuals.

The table below shows the distribution of the ABHR. Schools were only given once after which a directive was issued by the Ministry of Education that schools should not be given ABHR due to the risk of misuse/abuse by students. Hot Spot areas distribution only started during the last quarter of 2021.

Table 1: ABHR Yearly Tracking Log

ABHR Production (litres)	Distribution to H/C facilities (litres)	SWAP Sales (litres)	SWAP office Use (litres)	QA/QC(litres)	Schools (litres)	Hotspots (litres)
220	28.5	108	40	20		
100	45	71.34	35	15		
240	71.5	22.89	40	14		
550	340	15.84	30	15	130.5	
280	50	4.46	35	10		
150	205	50.66	40	18		
670	440	29.3	35	20		
150	185	20.25	40	15		
360	220	7	35	15		
240	165	69	40	15		
260	75	0	45	25		152
70	60	0	45	30		22.5
495.5	0	0	0	0		
3845.5	2030.5	425.46	509	257	130.5	174.5



Figure 11: Distribution of ABHR and hand washing stations to a health facility

VI. Enhanced Preparedness and Response to Communicable Diseases in Kenya

SWAP entered into a sub-ward agreement with Washington State University (WSU) for a public health and sanitation project to continue scale up production/distribution of alcohol-based hand rub (ABHR) and installation of hand washing stations in Nyando and Nyakach public health facilities and hot spot areas in the region with an aim to assess and evaluate the impact and efficacy of the intervention in the mentioned COVID-19 outbreak areas. The intervention rides on the mother CDC-SWAP program on alcohol-based hand rub (ABHR) production and distribution in 47 public health facilities in the two sub-counties. 34 Hot Spot areas were mapped which were identified as high risk areas for COVID-19 community transmission. Baseline and follow up assessments focused on hand hygiene were done. Leaders were introduced to the project and Hot Spot area managers were trained on social behavioral change, WASH and hand hygiene, COVID-19 prevention and their roles and responsibilities. Following the trainings, distribution was done to all 34 hot spot areas of hand washing stations and ABHR for selected sites. Distribution of ABHR to the health facilities was ongoing. IEC materials on hand hygiene were developed and distributed. SWAP received in December 2021 additional fund to start the production of liquid soap as well for use with the hand washing stations at the hot spot areas. The soap making is done at the SWAP model village. Samples were taken to the Kenya Bureau of Standards for approval.



Figure 12: A modified hand washing station provided to a local market

VII. Chronic Kidney Disease Study (CKD)

The objective of this study was to assess the prevalence of CKD among adults in the equatorial sugar belt of Western Kenya using standardized methods and to describe the health status of adults in the population-based study. SWAP completed this study which was funded by University of Illinois at Chicago and with technical support from KEMRI and Muhoroni County Hospital Laboratory. The research evaluated the presence of chronic kidney diseases among sugarcane cutters. During the activity, a total of n=671(85%) study participants were reached out of the total n=788(100%) All the in-depth individual interviews with sugarcane cutters data were successfully transcribed and data shared with the Principal Investigator for further analysis. The study revealed that in this study population, generally, chronic kidney disease is not a common problem. The study findings were disseminated to all the stakeholders and all study participants received their results which included; Kidney function, urinalysis, blood pressure, height, and weight. Participants with positive results were referred for medical care.



Figure 13: Field work for the chronic kidney disease study

VIII. COVID-19 Testing ANC Risk Stratification Tool for Decentralized Care

SWAP continued to be fund manager for a study on COVID-19 testing Antenatal Care Risk Stratification in Kisumu County. This study was funded by Bill and Melinda Gates Foundation and started in 2020. We received a nine months no cost extension. The objective of the study is to evaluate the feasibility of implementing a differentiated ANC provision through primary clinics and home care innovations in mitigating the disruption of ANC services due to the COVID-19 pandemic. The following were achieved during the period under review;

- Managed to set up 25 health facilities in Nyando and Nyakach Sub Counties and equipped them with supplies and commodities as well as deployment of staffs who have so far assisted the facilities in service delivery and also working towards achieving study objectives
- Trained healthcare workers and community health volunteers on study specifics including Mbali health, Medic mobile, Point of care devices, basic sonography and risk stratification. We continued to offer mentorship and on job trainings throughout the year.
- Successfully conducted joint support supervision with the County and Sub County health management teams. This impacted positively on the study activities because improvement from the health care workers was noted after the visits.
- A team of experts led by a consultant was able to finalize a document to guide health care workers in classifying pregnant women according to their risks to offer differentiated care. This was successful and was distributed to all the study sites.
- Managed to have successful performance review meetings with the county, sub county and facility staff. The study also supported data review meetings for the sub counties.
- A successful readout was done marking end of pilot phase in the study. The presentation was done to the Gates foundation and demonstrated how the systems (KE-EMR, Mbali health and Medic mobile) works and shared the data analysis report.
- After piloting in 10 health facilities, he was rolled out to additional 15 facilities where enrollments and data collection continued with few adjustments from the lessons learnt during pilot phase.
- By use of scan form registers, Data Collectors started data collection in 25 health facilities in Seme and Kisumu West Sub Counties. This was after a successful training of health care workers on the use of the scan form register.
- The target sample size was achieved and by end of October enrollments was completed.

IX. Fertility Preference and Contraceptive use among Mothers of Reproductive Age in an Informal Settlement.

In 2020, we signed an agreement with the International Union for the Scientific Study of Population (IUSSP) Fellowship award to Dr. Oele for research on Fertility preferences and contraceptive use among women of reproductive age in an informal settlement in Kisumu. Due to the COVID- 19 pandemic the study was suspended. The study is aimed at producing a policy relevant evidence of the effects of family planning and fertility changes on urban welfare.

X. Building Blocks for Positive Community Health

SWAP signed an agreement with STEMA, a UK based research group. The purpose of this grant is to engage SWAP as implementing partner to help develop a set of practical tools that enable agentic approaches to positive community health driven by local agendas, amidst multifaceted challenges. The procedures will be observational and participatory research, using both qualitative and quantitative data, working with local community members, decision makers and health care providers. The project was introduced to the Siaya County Health Management Team who approved the study and proposed the study site to be Bondo Sub County. Another meeting was held with the Bondo Sub County Health Management Team. 4 skilled qualitative research assistants were hired to carryout focus group discussion (FGD) and interviews with the community. Successful completion of stage one field work data collection was completed whereby 7 FGDs were conducted with 7 different categories in the community i.e. the Community Based Organizations (CBO), Faith Based organizations (FBO) (Churches, mosque, traditional healers), the Youth Groups, Schools (teachers from different schools), Health Care providers- targeting Community health volunteers (CHVs) and Opinion Leaders (Targeting Village elders).



Figure 14: Focus Group Discussions for the STEMA Project

XI. Chlorine Generation at Healthcare Facilities

SWAP received additional funding from VOx Impuls in the Netherlands for the procurement, training and installation of another 6 STREAM disinfectant generators at health facilities. The main aim is to enable facilities to produce their own chlorine solution (0.5% sodium hypochlorite) for infection prevention and control. With previous funding, two were installed and operational. For the production, it only uses water and common salt. All Sub Counties in Kisumu County selected larger Hospitals for the installation and are now no longer depending on mostly interrupted supply. Those who received have started supplying the neighboring facilities as well.

Following experiments in the lab the training was done to different health cadres at the selected facilities on the installation, standard operating procedures, benefits, maintenance and use, quality assurance and distribution to all patient care areas in the facility. The training included lessons learned from the two STREAM disinfectant generators already fully operational at Ahero County Hospital and Katito Sub County Hospital.

Table 2: List of Health Facilities and number of healthcare workers trained

Hospital	Sub County	Number of Health Workers Trained
Nyakach Sub County Hospital	Nyakach	15
Muhoroni County Hospital	Muhoroni	15
Gita Sub County Hospital	Kisumu East	18
Kombewa County Hospital	Seme	15
Chulaimbo County Hospital	Kisumu West	17
Lumumba Sub County Hospital	Central	18



Figure 15: Training of STREAM Disinfectant Generator training at Kombewa County Hospital

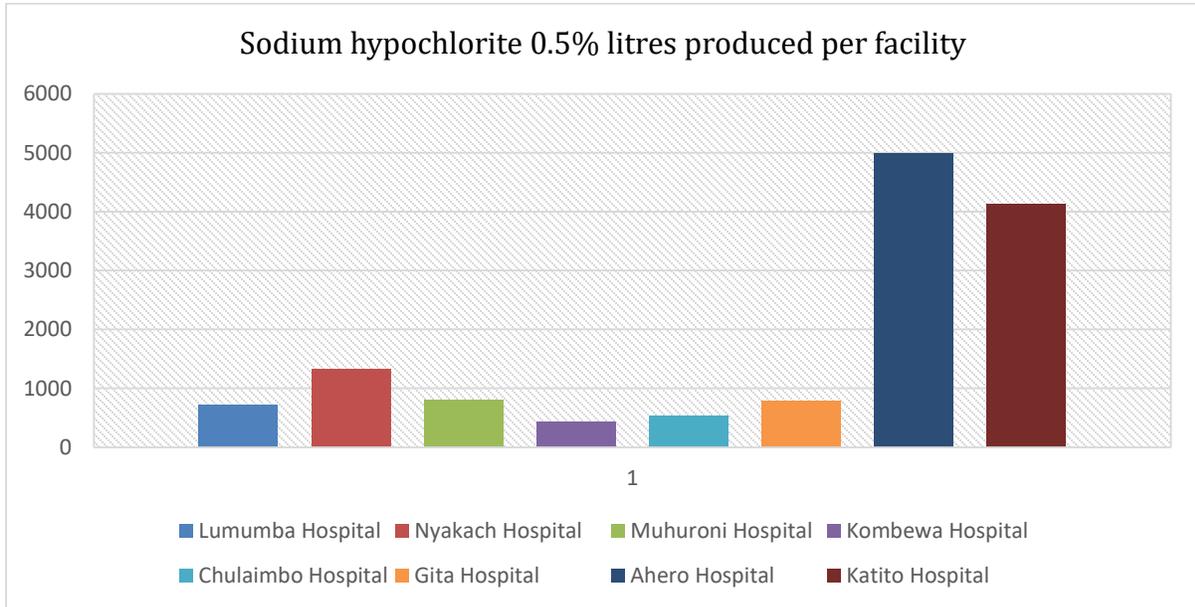


Figure 16: Graph showing total litres of chlorine produced per facility

At two health facilities in Ahero and Katito Hospital, SWAP did additional experiments to determine the oxidant degradation over time. If not stabilized the produce sodium hypochlorite is effective if stored well for about 2-3 weeks. However, from experience most of the facilities utilize the produced sodium hypochlorite within a day or maximum a week.

XII. Water, Sanitation, Hygiene and Waste Management in Healthcare Facilities

VOx Impuls supported in 2021 through conducting a follow up evaluation of an earlier intervention of Water, Sanitation, Hygiene and Waste Management in 27 Public Health Care facilities in Rarieda Sub County. This included a baseline survey, training of health workers, supply of WASH commodities and joint monitoring. The objective was to evaluate one- year post interventions impact. SWAP did facility assessment interviews with the In- charges and other health providers. Further observation was done of the presence and condition of water sources, latrines, hand hygiene and waste disposal. Water was tested for free and total chlorine using HACH color disk tests kits. KAP (Knowledge, Attitudes and Practices) Surveys were done with health workers and cleaning staff on thematic topics such as hand hygiene and infection prevention and control, drinking water treatment and management, waste management and cleaning. SWAP provided all 27 health care facilities with Alcohol Based Hand Rub. In general, the evaluation showed general improvements in WASH practices but for some the Joint Monitoring Programs WASH standards were not met such as waste management. After analyzing the data, the findings were shared with County and Sub County Health Management Teams.

XIII. Evaluation of Purosan ORS+ among children under five with diarrheal illness in rural Western Kenya.

SWAP signed an agreement in December 2021 with Elascion GmbH a German private company. Since 2018 Elascion GmbH is working on the combination of solid chlorine dioxide and Oral Rehydration Salts within a multi chamber bag and they are patent holder.

The aim of the field evaluation is a proof of concept in rural settings in Western Kenya with 50 study participants who are children under five years. The expected outcome is a reduction in the number of hospitalization of children under five years of age. The study will start in January 2021 in Nyakach Sub County.

3. Laboratory services

SWAP's water lab has been operational since 2007. It is supporting various research programs to test WASH interventions, technologies and products. The main mandate is to undertake bacteriological and chemical analysis of water. The lab is used for production of Alcohol Based Hand Rub. SWAP's lab has maintained quality standards and was regular subjected to proficiency testing whereby samples are taken to the Kenya Bureau of Standards. It uses modern technologies and has become an essential resource. We aim to turn this into a sustainable lab.



Figure 17: The Lab Manager at work in SWAP's water lab

4. Registration of SWAP as Foundation

Safe Water and AIDS Project was registered as Foundation in the Netherlands in August 2021. Through this, SWAP was to receive funding from Donor See, who do not allow funding to be channeled through a Kenyan Bank Account. A Dutch Board was established and is in the process of opening a business bank account. The Foundation will support SWAP's fundraising efforts.

5. Partnerships

SWAP has continued to rely on its extensive local and international network. We maintained the loyal effective partnerships and established new ones. We remained active members of HENNET and KEWASNET. We joined the National ECD Network. Due to COVID-19 pandemic, we had more virtual meetings. We attended the KEWASNET Water Sanitation and Hygiene Market Place Forum where we exhibited our health products. We joined COVID-19 stakeholder forums and the Technical Advisor attended weekly meetings with the Lake Region Economic Bloc COVID-19 advisory committee of eminent persons. We strengthened our partnership with the University of Illinois and applied together for the 3rd cycle of the Mohammed bin Rashid Al Maktoum Global Water Award and became one of the winners. This will be awarded in 2022 in Dubai. CDC partnership remained strong as donor, offering technical support and presence in the Board. New partners were with Washington State University, Oxfam, ELASCON and STEMA.

5.1 Networks and Partnerships

SWAP is a strong advocate of partnership and networking. It has remained a vibrant member in various networks and forums at Global, National and Regional levels with the following;

- University of Illinois at Chicago on Research and interventions
- Global Community of Practice on Decentralized Chlorine Generation
- Global Community of Practice on WASH in Healthcare Facilities
- Global Hand Hygiene Advisory Board
- Innovations in Health Care
- National WASH/IPC cluster for COVID-19
- National Commission for Science Technology and Innovation
- Health NGO Network (HENNET)
- Kenya Water and Sanitation Network, KEWASNET
- Early Childhood Development Network
- Lake Region Economic Bloc COVID 19 Advisory Committee of Eminent Persons
- Maseno University Ethics Review Committee
- Western Kenya Humanitarian Hub
- Women Deliver
- COVID-19 Stakeholders Forum
- County and Sub County GOK Departments (Health, Water, Education)
- Kisumu County Development Trust
- Lions International Kisumu Host

6. Visiting Organizations and Institutions

The following organizations and institutions representatives paid courtesy visit to SWAP office and field operation sites;

- Blue Tap, UK
- University of California, Davis
- Washington State University
- Vox Impuls
- Fundi Fix
- CDC Atlanta and Kenya
- OXFAM
- Abt Associates
- Winam Grassroots
- University of Illinois at Chicago
- RAND Corporation
- PharmAccess
- KEMRI CGMR, C
- Nation Media Group
- Lolwe TV
- Cornell College Iowa
- Wofford College S. Carolina
- World Health Organization
- Kenya Maritime Authority
- Kenya Medical Training College
- Generosity Global Inc
- International Water Resources Management Advisor- Lake Victoria Basin
- Carolina for Kibera
- Braeburn International School
- University of Alberta
- Lake Region Economic Bloc COVID-19
- Kenya Bureau of Standards
- Kisumu County Health Management Team Members
- STEMA
- Friends of the Old
- Jaramogi Oginga Odinga University of Science and Technology

7. Major meetings and Forums attended

SWAP was ably represented in major events that happened such as;

- World Water Day in Muhoroni, Kisumu County
- Global Hand washing day attended at Magadi Catholic Center where also COVID-19 Vaccination outreach was conducted.
- World Kidney Day at Mamboleo
- World Toilet Day celebrated in Nyakach Sub County
- World Clean Up Day in Dunga Kisumu
- NGO week in Kisumu
- 4th National ECD Network Conference held in Siaya
- Launch of Mathematics Resource Centre in Ombaka
- Water and Sanitation Market Place at Ciala resort
- National WASH IPC Cluster
- LREB COVID-19 Advisory Group
- COVID-19 stakeholders' forums
- Launch of the COVID Dx Data Base at LREB in Kisumu
- Technical working group and network forum

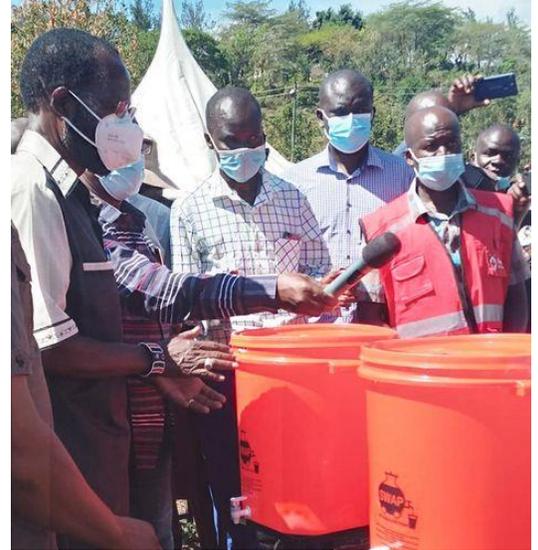


Figure 18: Kisumu County Governor during World Toilet Day celebration



Figure 19: Demonstration of hand washing steps during Global Hand washing Day

8. Human Resources and Administration

The objectives of this function are;

- To carry out Annual Performance Appraisal for staffs for the period of January to December 2021.
- To take part in the Pre-qualification of suppliers for 2021/2022 financial year.
- To ensure that the organization policies comply with labor laws and other regulatory policies.
- To update HR related data in the system e.g. Timesheet and Staff Personal details.

- To strengthen the staff welfare to support staff in various ways.
- Recruitment of new staffs.
- To participate in strategic planning

The following were achieved:

- The total number of staffs at the beginning of the year was 42, (22 males and 20 females) and by December 2021, a total of 74 staff.
- We had 7 students on industrial attachment in Finance, Procurement and Water Lab departments.
- The Annual Performance Appraisal for the staffs for the period of January to December 2020 was successfully done and report shared with all the staff.
- The prequalification of Suppliers for the financial year 2020/2022 was done.
- SWAP signed a tenancy agreement with Yellow House Outreach Services for a period of one year.
- Renewed Lease Agreement with Farm Africa and Ahero Model village for a period of 1 year
- SWAP welfare supported staffs who were bereaved and those who had new born babies.
- New staffs recruited and on board included; 1 Finance Officer, 1 M& E Coordinator, 11 Laboratory Technicians, 26 Data Collectors, 2 Field Officers, 1 Data Management Assistant, 9 Community Interviewers, 1 Officer Cleaner, 14 Enumerators, 3 Study supervisors, 1 Data Specialist, 1 Laboratory Assistant, 2 Project Officers and 1 Office Assistant. The M and E coordinator is co-founder and returned after study leave.
- Get together party for long term employee and end of year party.



Figure 20: Farewell party for Jane Pauline, long serving employee

9. Finance

Finance department has an important responsibility to carefully account for the SWAP Project's funds, efficiently manage organization resources, plan and provide for adequate funding of services required both within SWAP and in the community in accordance with the organization policy, Statutory requirements and Generally Accepted Accounting Principles.

During the Financial Year 2021 the organization managed a total budget of KES 186,735,535.75, including fund management of KES 67,887,720.00 meant for COVID-19 Testing ANC Risk Stratification Tool for Decentralized Care that was received in 2020 and expensed in 2021. The Total organization expenditure for the year 2021 was KES 130,739,154. Our income portfolio includes Funding from various donors, SWAP Income Generating activities (IGA), Currency gains and interest. The development partners were as follows;

- Private Well Wishers – Adopt a School Initiative
- USAID -Through Task Force on Global Health
- Bill and Melinda Gates Foundation through Stockholm Environment Institute
- CDC - US department of State
- VOX Impuls Foundation
- Washington State University
- Harber Charitable Foundation
- Center for Diseases Control and Prevention- Kenya Country Office
- Donor See
- Siemens Stiftung
- University of Illinois at Chicago
- ELASCON
- Gabriele Norado – Private Well wisher
- Bill and Melinda Gates Foundation through University of Illinois
- KEMRI CGMR-C
- Global Giving
- World Mathematics Fund
- OXFAM
- NIH -Research and Development Corporation (RAND)
- Pharm Access
- STEMA

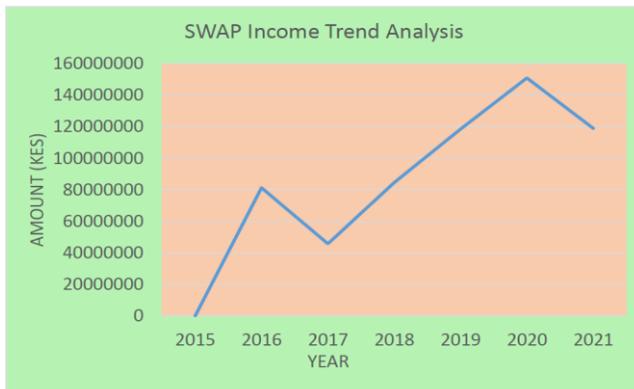


Figure 22: Income Trend Analysis

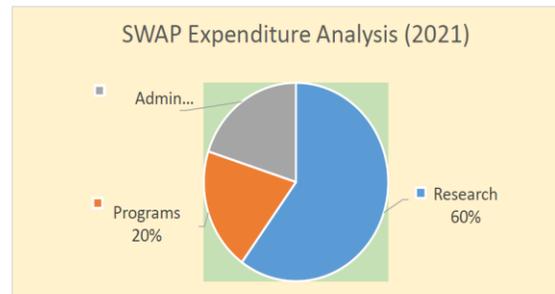


Figure 21: Expenditure Analysis

SWAP has had a steady trend of income from donors since inception. The decline in 2021 was as result of overlapping projects from the previous year due to COVID-19 pandemic effects. The expenditure for the year 2021 increased as a result of implementation of overlapped project from 2020.

Key recommendations include but not limited to leveraging long term funding for sustainability; improving donor relations and budget negotiations; fast tracking all project implementation as per agreed donor timelines and negotiating for better exchange rates with our bank.

Other recommendations include increasing revenue streams such as product sales, fund management, laboratory and office based services. SWAP further aims to maintain effective partnerships and increase visibility.

10. General challenges and possible solutions

- The COVID -19 pandemic brought a strain on the health sector and economic losses but was an opportunity for SWAP with demand for our services and products
- Heavy rainfall and floods in some parts of the region at the beginning of the year, but able to avert disease outbreak through support with WASH commodities, food and other supplies
However, it affected distribution of supplies to health facilities and some had to be reached by boat, since roads became inaccessible.
- Inadequate supplies and PPEs at health care facilities, SWAP managed through donor funds and crowd funding to support.
- Increase in prices which affected our turnover of fast moving products
- Stiff competition from competitors in the market but able to reach out to new customers
- Limited resources to support more vulnerable and desperate cases referred from the community saw us appeal for additional support through crowd funding
- Ahero water operator left and joined college but SWAP was able to train a replacement
- Pump failures in Ahero and Mugruk though new pumps which are more efficient have been bought and installed.
- Inaccuracy of water sales data and delayed transmission to SWAP server made SWAP invest in more training on data management.
- Late approval of funds for program implementation of COVID-19 response, but managed to pre-finance and negotiate for an extension.
- Separation of the parents, refusals and death as well as demolition of houses led to loss of study participants during follow up surveys. But these are expected study limitations.
- There was a delay with the provision of praziquantel tablets but this was resolved by the National NTD Department at the Ministry of Health.
- Donor requesting at the end of research refund of dollar gains that had not been communicated at the project initiation.
- Nurses strike that led to partial and or full closure of some facilities for close to three months. This interfered with production and distribution of ABHR from January to February 2021.
- Theft at facilities of hand washing stations, soap and ABHR and damaged hand washing stations, mostly not well managed and exposure to the sun.
- Lack of water supply at some of the hot spot areas and some irresponsible managers. SWAP invested more in training.
- Due to lengthy FGD sessions and changes in data collection tools the field team had to set off to the field very early (7:00AM) and depart from field very late in the evening (5:30PM). The study timelines may not be realistic. SWAP negotiated with the donors for amending timelines and budget.

- Teething problems with the STREAM disinfectant generators, but ongoing monitoring and mentorship including some replacement of spares solved the situation.
- Some of the WASH infrastructures were damaged but no proper maintenance plans are in place to ensure continuity and sustainability.
- Basic Health Care Waste Management Services is still at its worst state despite the short term intervention which was put in place by partners. This needs action from County Governments.
- Termination of staff contracts and changes in the level of efforts due to reduced funding and disengagement with ABT Associates.
- Insufficient budget to support projects that require pre financing; and currency losses resulting from fluctuating exchange rate against the budget.

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